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Real Estate Economists, Appraisers and Counselors

TREATMENT OF DEMOLITION COSTS IN THE APPRAISAL PROCESS

IN recent years downtown districts of many cities throughout the country have found the need for additional parking facilities which can be secured only by the purchase of land containing improvements. In order to assemble land as inexpensively as possible, sites that are improved with low grade improvements are generally selected. Most of the improvements are in the last stages of their remaining economic life. In addition to acquiring land for parking purposes, there are occasions when additional land is needed for expansion purposes of existing facilities. Either of these requirements necessitates appraisals.

The appraisal problem is generally more complicated when the improvements are nearing the end of their economic lives. Many of the improvements situated in these areas are detrimental to the land value. By this, we mean that the return on the improvements and on the land upon which the improvements are situated do not justify a fair return on the market value of the land if considered vacant and available to development to its highest and best use. Under these circumstances, the appraiser would show frequently that the improvements have no value and would value the land as if vacant and suitable for development without discounting the value by the cost of demolition which is necessary to justify the highest and best use of the land. We have seen appraisal reports that do not discount the value of the land. Such appraisals are in error, although such errors are relatively few. On the other hand, we have frequently seen appraisals made under such circumstances that provide for a remaining economic life estimate of 5 to 10 years on the improvements with no provision made for the cost of removing the improvements at the termination of their economic life. In some instances, the demolition costs have been relatively insignificant, but in some others the error would result in overvaluations in excess of 20% of correct fair market value.

In all three approaches to value, consideration should be given to the future costs of removing the improvements at the termination of the economic life of the structure. In the income approach an appraiser could set up a sinking fund which would provide periodic payments, which, at the termination of the economic life of the property, would provide the cost of demolition. The sinking fund requirements could be deducted from the net income before capitalization

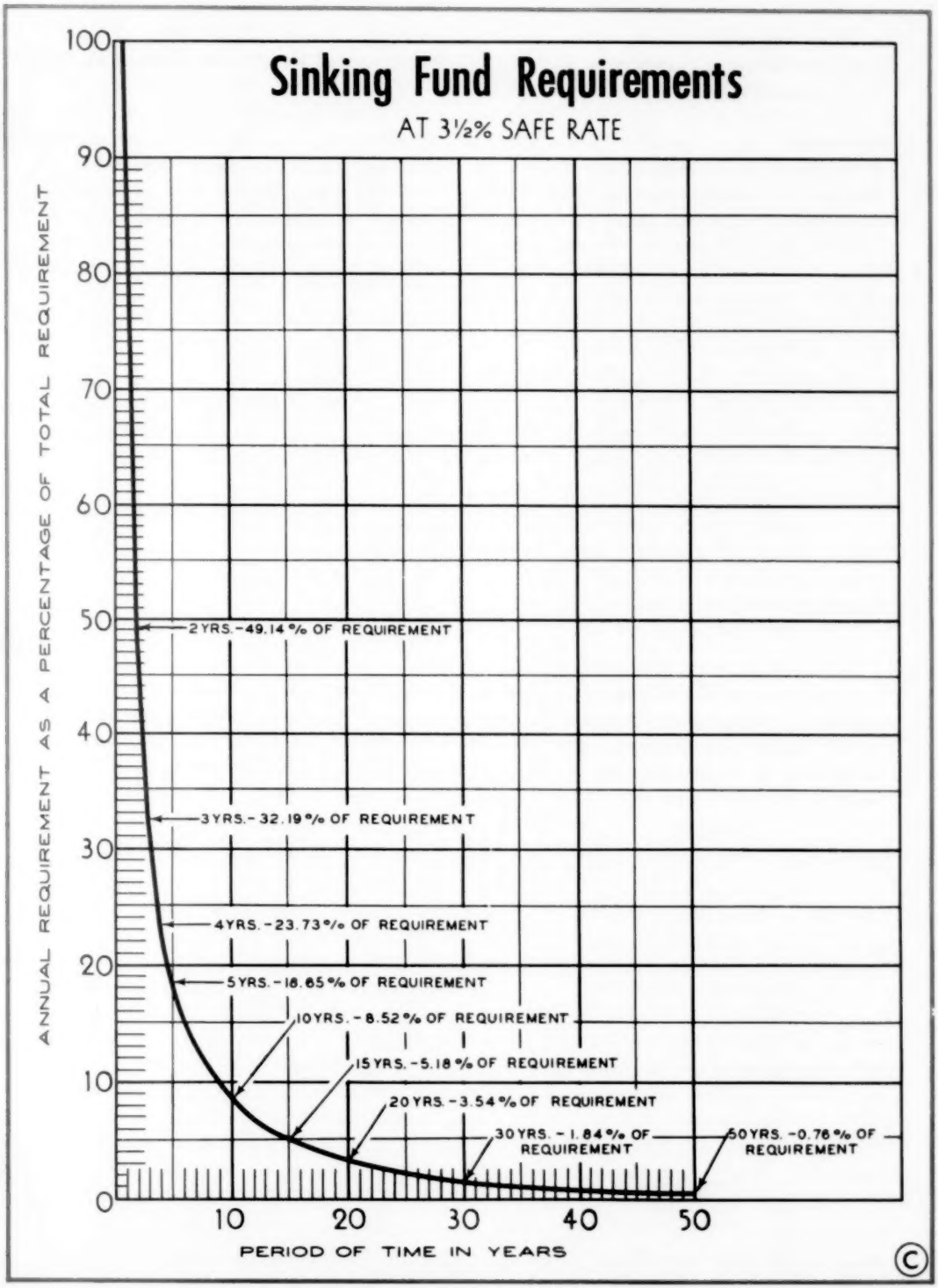
and provisions for depreciation. A building residual application of this method is shown below.

Assumed:	
Land value (by comparison)	$25,000.00
Net income before depreciation	3,000.00
Remaining economic life	5 years
Cost of demolition	5,000.00
Then:	
Net income	$ 3,000.00
Less sinking fund provisions	
3.5% safe rate, 5 years, factor 0.18648	
So $5,000 x 0.18648	932.40
Return on land and improvements	$ 2,067.60
Less land return, $25,000 value @ 7% (in perpetuity)	1,750.00
Return on improvements	$ 317.60
$317.60 capitalized @ 8% = 20% (straight line depreciation rate for 5 years) $317.60 ÷ 28% =	
Value of improvements	$ 1,134
Add land value	25,000
Total value	$26,134
Call	$26,100

Another means of providing for the reduction in value because of impending wrecking costs would be to deduct from the capitalized value the present worth of the cost of demolition, deferred until the end of the period of the remaining economic life of the improvements. An example of this method of treating the income is shown below.

Net income	$ 3,000.00
Less land return	1,750.00
Return on improvements	$ 1,250.00
$1,250 capitalized @ 8% + 20% = 28% (straight line depreciation rate for 5 years remaining life) $1,250 + 28% = value of improvements	$ 4,464.00
Add land value	25,000.00
Value without considering demolition	$29,464.00
Less present worth of deferred demolition (value of reversion, $5,000 x 0.842 factor for 5 years @ 3½%.	-4,210.00
Fair market value	$25,254.00
Call	$25,250.00

The deposit today of $4,210 at compound interest at a 3½% safe rate will provide for $5,000 five years hence when demolition is estimated to be required. It will be noticed that the valuation conclusions reached by the two


Sinking Fund Requirements
AT 3½% SAFE RATE
ANNUAL REQUIREMENT AS A PERCENTAGE OF TOTAL REQUIREMENT
100
90
80
70
60
50
40
30
20
10
0
2 YRS. - 49.14 % OF REQUIREMENT
3 YRS. - 32.19 % OF REQUIREMENT
4 YRS. - 23.73 % OF REQUIREMENT
5 YRS. - 18.65 % OF REQUIREMENT
10 YRS. - 8.52 % OF REQUIREMENT
15 YRS. - 5.18 % OF REQUIREMENT
20 YRS. - 3.54 % OF REQUIREMENT
30 YRS. - 1.84 % OF REQUIREMENT
50 YRS. - 0.76 % OF REQUIREMENT
10
20
30
40
50
PERIOD OF TIME IN YEARS
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methods are $850 apart. This difference is the result of the fact that in the first instance the reduction in value is brought about by a reduction in the income stream over the period of the remaining life of the property. In the latter instance a single payment is made at the time of purchase and the owner will secure only a return on the reduced investment. On this basis the owner is receiving his speculative return on a smaller amount than in the first instance. To justify a single value in this instance, it would be necessary merely to find the present worth of the future costs of demolition at an 8% return instead of a 3½% return that was used above. In this instance the deferment factor would be 0.681 instead of 0.842 and the present value of the deferred wrecking costs would be $3,405 instead of $4,210. This would result in a fair market value of $26,059, which would be rounded off at $26,100 which balances with the former application.

The latter method would be applied to the conclusions reached by the summation approach to arrive at fair market value. This would not be used, however, if the appraiser gave adequate consideration to the cost of demolition in applying accrued depreciation, providing that the net worth of the improvements is sufficient to provide for demolition.

The market data approach would be used generally to secure the value of the land only, as it would be very unlikely to find another property, sold recently, that would have the same type of improvements which would cost the same amount to wreck and would have the same future economic life as well as an equal land value.

When the treatment of demolition costs was discussed with other appraisers, some agreed and others disagreed with the idea. The question was asked frequently, "Shouldn't the cost of demolition be considered when appraising a property with new improvements?" Theoretically, the answer should be "Yes." However, the newer the building, the more difficult it is to estimate reasonably the future remaining economic life of the improvements. Furthermore, the amount necessary to set aside a sinking fund to provide for the costs of demolition is relatively insignificant when the improved property has a 20-year or more remaining life.

The chart on the previous page shows the annual sinking fund requirements necessary to produce at compound interest the demolition costs for periods up to 50 years on a 3½% interest rate basis. If the demolition costs amounted to $10,000 and the improvements had a 5-year remaining life, $1,865 would have to be set aside from the annual income to provide the demolition costs at the end of the 5-year period. If the improvements had a 10-year life, the sinking fund requirements would be only $852 per year and for a 15-year life only $518 per year. For the 20-year life, the annual requirements would be but $354, and for 50 years, $76 per year. The line on the chart shows clearly this rapid decrease in sinking fund requirements that would be necessary to provide for demolition charges as the economic life of the property increases. For this reason, it is recommended that provisions for demolition be made only in an appraisal that has improvements nearing the end of their economic life.

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